

IN THE CLAIMS

Please amend claims 1, 4, and 6-8 without prejudice or disclaimer; cancel claims 9-20 without disclaimer; and add new claims 21-25. A complete listing of the claims of this application follows.

Claim 1 (Currently Amended): A manufacturing process for producing a cross-connected matrix of optic fibers comprising:

providing a plurality optic fiber paths on a fiber positioning fixture;
sequentially routing at least one optic fiber on the ~~optic~~ fiber positioning fixture ~~[[by;]]~~ by:

arranging the at least one optic fiber into n fiber runs having ~~into~~ at least two input groups based on a predetermined map, with at least m of the n fiber runs having a first end being in one of the at least two input ~~group~~ groups, where m is an integer defined by $2 \leq m \leq (n - 1)$;

arranging the at least one optic fiber into at least two output groups based on the predetermined map, with ~~the~~ a second output end of at least one of the m of the n fiber runs ~~fibers~~ being in a different one of the at least two output ~~group~~ groups than ~~the output group of~~ another of the m of the n fiber runs; and

ribbonizing the first ~~ends~~ end of each of the n fiber runs in the at least two input groups and ribbonizing the second ~~ends~~ end of each of the n fiber runs in the at least two output groups.

Claim 2 (Original): The process of claim 1, further comprising arranging the first ends of the optic fiber runs in at least one of the input groups into a $1 \times r$ array, where r is an integer ≥ 2 .

Claim 3 (Original): The process of claim 1, further comprising arranging the second ends of the optic fiber runs in at least one of the output groups into a $1 \times s$ array, where s is an integer ≥ 2 .

Claim 4 (Currently Amended): The process of claim 1, further comprising vertically aligning the first and second ends of the optic fiber runs in the input groups and the output groups prior to ribbonizing the at least two input groups and the at least two output groups.

Claim 5 (Original): The process of claim 1, further comprising holding the input groups and the output groups in position with fiber guides on the optical fiber positioning fixture prior to and during the ribbonizing.

Claim 6 (Currently Amended): The process of claim 1, further comprising arranging the ~~optical~~ n fiber runs using a programmable controller computer ~~controlled, and programming the predetermined map into the computer~~ in operative communication with an optic fiber dispensing head connected to a moveable positioning system.

Claim 7 (Currently Amended): The process of claim 1, further comprising: arranging the first and second ends of the n fiber runs such that a number of the at least two input groups and the at least two output groups created is equal to a number of the n fiber runs in each of the at least two input groups and the at least two output groups, ~~the fibers from each input group being routed to different output groups.~~

Claim 8 (Currently Amended): The process of claim 1, wherein the at least one optic fiber is routed on the fiber positioning fixture by ~~placing~~ positioning the one optic fiber along a first length of the fiber positioning fixture from one of the at least two input groups to one of the at least two output groups while moving in a first direction across the fiber positioning fixture to form one of the n fiber runs, and then in a first path to form a first run, wrapping the one optic fiber around a

turning point wrapping post and positioning the one optic fiber along a second length of the fiber positioning fixture from one of the at least two output groups to one of the at least two input groups while moving in a second direction, generally opposite to the first direction, to form another one of the n fiber runs.

Claims 9-20 (Cancelled).

Claim 21 (New): A manufacturing process for producing a cross-connected matrix of optic fibers comprising:

providing a plurality of optic fiber paths on a fiber positioning fixture;

sequentially routing at least one optic fiber on the fiber positioning fixture by:

arranging the at least one optic fiber into n fiber runs each organized with a first end in one of at least two input groups and with a second end in one of at least two output groups, at least m of the n fiber runs having the first end in one of the at least two input groups, wherein m is an integer defined by $2 \leq m \leq (n - 1)$, the second end of at least one of the m of the n fiber runs being in a different one of the at least two output groups than another of the m of the n fiber runs; and

ribbonizing the first end of each of the n fiber runs in the at least two input groups and ribbonizing the second end of each of the n fiber runs in the at least two output groups.

Claim 22 (New): The process of claim 21, wherein the at least one optic fiber is routed on the fiber positioning fixture by positioning one optic fiber along a first length of the fiber positioning fixture from one of the at least two input groups to one of the at least two output groups to form one of the n fiber runs, then wrapping the one optic fiber around a wrapping post and positioning the one optic fiber along a second length of the fiber positioning fixture from one of the at least two output groups to one of the at least two input groups to form another one of the n fiber runs.

Claim 23 (New): The process of claim 22, wherein the n fiber runs are arranged based on a predetermined map.

Claim 24 (New): The process of claim 23, wherein the fiber positioning fixture is generally planar.

Claim 25 (New): A manufacturing process for producing a cross-connected matrix of optic fibers comprising:

providing a plurality of optic fiber paths on a fiber positioning fixture;

sequentially routing at least one optic fiber on the fiber positioning fixture by:

arranging the at least one optic fiber into n fiber runs each organized with a first end in one of at least two input groups and with a second end in one of at least two output groups according to a predetermined map, at least m of the n fiber runs having the first end in one of the at least two input groups, wherein m is an integer defined by $2 \leq m \leq (n - 1)$, the second end of at least one of the m of the n fiber runs being in a different one of the at least two output groups than another of the m of the n fiber runs;

wherein the at least one optic fiber is sequentially routed on the fiber positioning fixture by positioning one optic fiber along a first length of the fiber positioning fixture from one of the at least two input groups to one of the at least two output groups to form one of the n fiber runs, then wrapping the one optic fiber around a wrapping post and positioning the one optic fiber along a second length of the fiber positioning fixture from one of the at least two output groups to one of the at least two input groups to form another one of the n fiber runs; and

ribbonizing the first end of each of the n fiber runs in the at least two input groups and ribbonizing the second end of each of the n fiber runs in the at least two output groups.